

suggests any means to decide reactions to external conditions or to them.

- 3) All such "stimulations" are without any directional significance.
- 4) The stimulations (a buzzing noise from one place anywhere in the mouth) are not indicative of any directional magnitude, direction, speed or body attitude.
- 5) Nothing in Knierim's oral buzzing has any relationship to "some spatial frame or reference relatable to an actual environment" or to "a discernable point".
- 6) There is nothing in Knierim's oral buzzer's "actual (external) environment" that has any effect on anything Knierim does. Nothing in the buzzer sound is "perceptible to the brain as related to a discernable point whose positions may be perceived in some spatial frame or reference relatable to an actual environment"

Knierim is a timer and magnet-proximity switched buzzer.

The office action also suggested that "The behavior controller means direct an action with instructions that include directions whose intent will be recognized intuitively due to graphically perceived points which are related in the mind to desired actions or spatial locations in the current environment".

- A. Knierim neither has nor could accommodate (if he had it) knowledge of or data regarding "graphically perceived points which are related in the mind to desired actions or spatial locations in the current environment".
- B. The term "graphically perceived points", in the context of the specification and in typical graphical and spatial applications, refer to spatial arrays. These are typically Cartesian matrices (ex: rows and columns) but can also be represented by polar coordinates (which are point-for-point identical to their Cartesian counterparts). What the term does not refer to is a single point such as a buzzer that is placed in no
- C. ~~particular location~~ "graphically perceived points" (which is actually only the one singular location of the oral buzzer located just about anywhere in the mouth) is "related in the mind to desired actions spatial locations".
- D. Knierim's beeper is intended to be not an indicator of spatial positional relevance but simply "sufficiently irritating and, perhaps, embarrassing to causes the patient to prefer wearing the headgear over hearing a beeper inside his mouth". (Knierim Col. 2 line 25-28)
- E. There are no "actions" to be directed relative to positions "perceived in some spatial frame". There is only one action, i.e. put on the headgear. It is not related to any spatial reference.

Knierim is a timer and proximity switched buzzer.

Regarding the Knierim's battery: "The examiner considers this to be a power the provision of power where needed to the controller means." Applicant agrees is a battery connected to electronics. However, what it powers is not a spatial controller. Although it might be acceptable language to call both a bicycle and a

airplane a "vehicle", that does not make them the same thing. Similarly, and proximity controlled buzzer's circuit board (turning a buzzer on) and a multi-dimensional spatial calculation and signal directing system can both be called a "controller", the similarity ends with the non-definitive label.

10. "Regarding claims 2-3, the examiner considers the magnetic communication between the mouthpiece (12) and the orthodontic headgear to be a communication means for communicating between the behavior controller and an external entity (the headgear), wherein the communication means is a ~~Applicant respectfully submits that communication.~~"

- A. This un-attenuated (fixed electromagnetic field) permanent magnet and uncharged, passive coil is not a "wireless means of data communication" by any communications standard of wireless communications either in terms of a data-driven electromagnetic induction (modulation) process in the "sender" or in the ability to demodulate data-driven attenuation
- B. ~~The un-attenuated~~ and completely passive coil couldn't even be equated to a telegraph means which can at least send and receive a
- C. ~~The suggested~~ "communication means" has neither the means for creating 2 way communications nor for making use of such if it were
- D. ~~Somehow it communicates~~ with a magnet. The magnet has no data reception means (and, of course, no parsing or interpreting means).
- E. The magnet is neither a sensor nor a logic controlled sender. It is neither end of a "communications means".
- F. The receiving end of the suggested "communication means" is defined by Knierim as "a magnetic switch" (Knierim column 4, line 41-42) not as a receiver (and certainly not as a sending unit).
- G. The inductive current rise that is "communicated" has nothing to do with spatial positions, directions, velocities, or anything resembling data beyond the "up" condition of an off-the-shelf proximity switch.
- H. The un-attenuated magnet and completely passive coil is, in fact, simply a common proximity switch; not to be confused with a data communication
- I. ~~The fact~~ that a timer may ultimately trump the proximity switch's "up" position is irrelevant because the function that the switch in question performs is still only that of the common magnetic off/on switch.
- J. Like the earlier example of equating a bicycle with the means and embodiments of a jet airplane (somehow equating the two by simply calling them both "vehicles"), the temporal induction of a current around a passive, un-encodable coil nearing a completely un-attenuated magnet might be called "wireless communications" using extremely indistinct nomenclature.

There are, however, substantial foundational differences between the data-driven signal-encoded attenuation of a modulating and demodulating communications system from the function, purpose or scientific basis of a proximity switch.

11. "Regarding claim 6, the examiner considers the beeping alarm of Knierim to indicate a direction of the headgear relative to the user's head or mouth". Applicant respectfully submits that:

Knierim states (column 4, lines 36-45) that "When the bow 16 and prongs 18 are positioned as shown in FIG. 1, a headstrap 26 extends around and behind the patient's head and places tension on the bow 16 to place a force on teeth 21 and, in this position, the bow 16 will place the magnet 14 in close proximity to the mouthpiece 12. The mouthpiece 12 includes a magnetic switch 27, a logic circuit 28, a battery 30 and a beeper speaker 32, all encapsulated within a plastic material such as methyl methacrylate that is commonly used in the field of orthodontics for appliances supported within the mouth of a patient. Preferably, the mouthpiece 12 is specially constructed in the lab to fit within a particular patient's mouth." Thus:

- A. The speaker/buzzer is not only fixed at a single location, but that location is also buried, literally molded "within a plastic material such as methyl methacrylate" location is both static and insulated from any electronic stimulation to the wearer and any specific positional vibration communication to the wearer by the surrounding molded methyl methacrylate.
- B. The speaker or buzzer, when the proximity switch and timer close the circuit, create a buzzing that has no data significance except the lack of proximity.
- C. The user is unaware of any directionality responsive to the speaker.
- D. Knierim's system is equally ignorant of any directionality. It has no data to provide the user of directionality.
- E. It also has no means to do anything with directional data even if it had some (see above notes regarding the static, mold-encapsulated and insulated nature of the buzzer).
- F. Further, Knierim's system is adequate only for recognizing proximity, not direction.
- G. The headgear's magnet and the worn coil will induce a similar current even if the headgear is imperfectly centered. Thus, even if Knierim's system had the capacity to deal with directional data, which it does not, the directional data would be inaccurate.

Engineers note: It would be theoretically possible for headgear position (not really direction) data more accurate than Knierim is capable of to be integrated between two distance-separated magnets of precisely known position, field range and strength. However, it would be difficult to execute with precision in mouths of consistently non-standard shapes and sizes and in constantly moving and growing teenage mouths, the data so captured have nothing to do with the goals or claims of Knierim and, of

- I. To Knierim, it did not highlight the ineffectiveness described above, Knierim teaches nothing regarding directional cognizance of anything at all; only the general proximity of a magnet to a near coil.
- J. Knierim clearly teaches that the purpose of the un-attenuated magnet and the passive "switch" is to, given adequate proximity, simply close the circuit on the "magnetic switch" (column 3, lines 1-4).

- K. This unattenuated, binary, open or closed condition of Knierim's proximity switch neither provides nor teaches a means capable of accurately sensing the gradients of dynamic direction capture nor a method or means for communication of the substantially more data-intensive directional data.
- L. Nothing in Knierim teaches nor has the capacity for accurate directional sensing and, if it did, it has no means whatever for communicating anything beyond off/on proximity to the wearer.

12. "Regarding claim 13, the examiner considers the mouth piece (12) of Knierim to be arrayed in a roughly semi-circular area." Applicant respectfully submits that the mouthpiece is not an array of anything.

Claim 13 teaches and environment wherein:

"stimulation means or some subset of them are arrayed in a roughly circular or semi-circular area so that they may be related by the mind to direction; whereby a stimulation at a point in the roughly circular or semi-circular array corresponding to a direction in the current environment may be perceived as an indication of angle or degrees of change."

- B. The mouthpiece is not an array of "stimulation means" (nor a symmetric array of anything else; it is a block of methyl methacryate with embedded battery, coil, circuit board and buzzer). The mouthpiece is a component chassis for non-specifically positioned parts, not an array of "stimulation
- C. ~~Nothing~~ on the eclectic component list for the block of methyl methacryate has anything to do with an "array corresponding to a direction in the current environment" which "may be perceived as an indication of angle or degrees of change."
- D. Applicant respectfully submits that it is incorrect to equate a plastic component chassis of completely different, position-irrelevant parts (none of which have anything to do with stimulation, symmetrically arrayed or otherwise) with an directionally-driven symmetric array of stimulators each having directional significance.

13. "Regarding claim 14, the examiner considers the magnet sensor disclosed by Knierim to be a first sensor means operatively connected to behavior controller means for sensing the direction of the body, whereby the behavior controller means can monitor and automatically respond to any instruction received by the body." Applicant respectfully submits that:

- A. Claim 14 states: "The device of claim 1 further comprising: a first sensor operatively connected to behavior controller means for sensing the attitudes, or speed, or any combination thereof, of the body; whereby controller means can monitor and automatically respond to any instruction followed, or reward an instruction that was followed, or any combination thereof."

The magnet sensor disclosed by Knierim is neither taught to sense any of

Also, what it signals is neither spatial nor precise enough to be of any value in directing a body to perform spatially which is the context of both specification claims.

15. Examiner considers Levine's stimulator to be "stimulation means placed in a formation conducive to providing stimulations perceptible to the brain as a discernable point, or points, or shapes, or any combination thereof whose positions may be perceived or learned to be perceived in some spatial frame of reference relatable to an actual environment with said stimulators being physically located on or proximate to parts of the body with adequate sensitivity to said stimulations; and a behavior controller means operatively connected to stimulation means for directing stimulations".

Applicant respectfully submits that:

- A. The potentially singular electrode of Levine is not "in a formation conducive to providing stimulations perceptible to the brain as a discernable point, or points, or shapes, or any combination thereof". It is not a formation of anything. It is simply an isolated electrode with no particular locational significance isotropically dishing out electricity on
- B. ~~Levine adds from the prior art that it provides~~ spatial directions that would be dependent on the ability to provide "stimulations perceptible to the brain as a discernable point". Although an understatement, this is analogous to replacing a compass with a light that comes on when you do bad (including wandering "out of bounds"). Rather than directing you x degrees to the right for a specific period to go around an obstacle and then y degrees left, Levine only "stimulates you" when you're "out of
- C. ~~bounds~~ does not provide or teach any means for knowing the azimuthal orientation of the wearer (radio waves are isotropic and pass through the wearer's body). Thus, it is inadequate for providing a "spatial frame of reference relatable to an actual environment". Levine can't even give crude directions like "go a little to the left" much less provide anything "perceived in some spatial frame of reference relatable to an actual environment" that would allow the intuitive spatial perception applicable
- D. ~~Levine has no ability~~ to resolve to anything resembling a "discernable" Levine's worn assembly has no distance sensor whatever and, in fact, time-difference-of-arrival and/or triangulation of radio waves from a location. This information, even when the radio waves are not attenuated incident microwave corridors, path extended by indirect paths between tall adjacent building rows, is already too low in precision to provide (even if azimuth were known which it isn't) gradient directional information to the navigate around objects whose size are below the Modulation Transfer (MTF) limited effective precision of the time-difference placement system.

In other words, Levine neither teaches nor provides a means capable of resembling any "discernable point" that might provide a spatial basis for

real-time spatial guidance around the obstacles of the wearer's environment.

- E. It is also neither the purpose of Levine or a teaching of Levine that a point would ever be identified. Levine is an "out-of-bounds" alarm with no spatial direction capacity designed or delivered.
- F. Points in the wearer's environment are not made "perceptible to the brain as a discernable point, or points, or shapes, or any combination thereof whose positions may be perceived or learned to be perceived in some spatial frame of reference relatable to an actual environment". There is nothing graphical about Levine at any level. No perception of directions overlaid over an "actual environment" are possible. The wearer needs to find his own way back "in bounds".
- G. Because of all of the above, and, in particular, the complete lack of the elements needed for communicating a spatial or graphical perception of perceived points in the current environment, "the behavior controller means" cannot "direct an action with instructions that include directions whose intent will be recognized intuitively due to graphically perceived points which are related in the mind to desired actions or spatial locations in the current environment."

16. "Regarding claim 10, the system of Levine discloses a **series of points indicating** by the stimulation means that create the **perception of a line that indicate a distance to be achieved..**" None of the words in bold above are found anywhere in either the specification or claims. The word "stimulation" does occur but only once (col.11 line 61) and then very specifically identifying one and only one purpose: "to discourage the subject from using such substance" which is completely unrelated to navigational direction.

17. "...The examiner considers this [remote GPS location transmission] to be GPS means operatively connected through data transmission means to remote control means". This wording creates a straw man which would seem to disqualify anything with a GPS location transmission to a host. Even claim 22 is a subclaim of a subclaim, applicant respectfully takes issue to submit that claim 22 doesn't simply list such. Instead claim 22 differentiates the intent and design by indicating that this is part of the primary structure for allowing the system to "...manage the behavior of the body being directed with respect to a map, or a path, or a direction, or an area on the map, or any combination thereof by comparing the actual GPS position with a desired position **and directing the body accordingly.**"

Further, Levine has no directional control in excess of that of an "invisible dog fence" which simply penalizes the breach of a perimeter.

18. Claim 23 uses video to "...direct the body by sending stimulation instructions behavior controller". Levine has no navigational functions or aspirations but only

the camera to, optionally "if necessary" watch for misbehavior such as deliberate destruction". Further these cameras are neither dedicated to or body positioning or navigation – particularly when "scanning the surrounding not the body-position registered foreground image.

19. "The examiner considers this to be stimulation means placed in a formation conducive to providing stimulations perceptible to the brain as a discernable point, or points, or shapes, or any combination thereof whose positions may be perceived or learned to be perceived in some spatial frame of reference relatable to an actual environment with said stimulators being physically located on or proximate to parts of the body with adequate sensitivity to said stimulations; and a behavior controller means operatively connected to stimulation means for directing stimulations." Watson's barking collar is blind to any and all positions, discernable points, or any spatial reference frames. If the dog barks or makes a bad noise, he hears a sound that has nothing to do with positions or physical or dimensional frames of references of any kind. An "interval of time" determines the bad behavior (too often is bad) and delays or eliminates responses based on time intervals and sounds. This device does not teach, anticipate or have the any of the capacities required to effect any "discernable points" that would be perceived as anything resembling spatial directional cues.

20. Applicant agrees that animals such as dogs can smell scents including pheromones and that these smells, like sights and sounds, can be exciting. However, Watson can do nothing but spray in a timing-incompetent and non-sensical (from a spatial direction-encoding perspective) direction in response to a dog not barking for a long enough period of time.

This response capacity is not in any way real-time capable – in fact its design specifically precludes such a capability. The timer might have another 10 minutes before deciding that the dog has been good enough for a thrill – which may put the response fully minutes after the needed "direction". Watson neither anticipates nor teaches the use of smells, etc. responsive to an immediate or instant situation; such a claim being obviously inappropriate in a system where behavior and response is graded by a how many actions (all of them bad by definition) occurred over a summed period of time adequate for multiple bad behaviors to be summed.

Also, Watson's perfume spraying dog collar (Watson does not anticipate pheromones) does not have the physical capacity to recognize spatial body attitudes, the capacity to understand what to do with them if it did, and it does not have the ability to direct the body to directionally specific actions.

Amendments to the claims:

Some of the claims are also amended below. This is not to modify the substance claims but to remove excessive length and uses of the word "or" which has been considered indefinite in some court defenses. I do not have an attorney and

that some of the claims were "wordy". Also, in claim 1, the term "real-time" was (see [0080] and [0064] as examples in the specification).

1. (currently amended) A device for the direction of a living body comprising: ~~stimulation means~~

stimulators placed in a formation conducive to providing stimulations perceptible ~~to the brain~~ as a selected one of the group comprising:

A. a discernable point or, B. points, or C. shapes, or and D. any combination thereof of A, B, and C whose positions may be perceived ~~or learned to be perceived in some spatial frame of reference as~~ relatable to a n actual spatial ~~environment~~ stimulators being physically located on or proximate to parts of the body with adequate sensitivity to said stimulations

and a behavior controller ~~means~~ operatively connected to ~~stimulation means~~ stimulators for directing stimulations;

and a power ~~means~~ source for the provision of power to components requiring power; ~~where needed to the controller means, elements connected to the controller means, or any combination thereof~~

whereby the behavior controller means may direct ~~an action or a series of~~ guide body actions, essentially in real time, with these spatially related directions.

~~with instructions that may include directions whose intent will tend to be intuitively recognized or more easily learned by the mind due to graphically perceived points, patterns, or pointers, or visually oriented points, or selective or varied stimulations of a point or points which are or can be related in the mind to desired actions or spatial locations in the current environment, or any combination of any of the above.~~

2. (currently amended) The device of claim 1 further comprising; a communication ~~means~~ device for ~~communicating~~ communications between the ~~behavior controller and any external entity, or relaying communications between the behavior controller and any external entity.~~

3. (currently amended) The device of claim 2, wherein: the communication ~~device~~ means is effected by a selected one of the group comprising A. radio, or B. by a wire, C. or by video transmission, D. or by infra-red transmission, E. or any practical wireless means communication, and F. or any combination of A, B, C, D, and E. thereof

4. (currently amended) The device of claim 1, wherein: the ~~stimulation means~~ are is located in the mouth.

5. (currently amended) The device of claim 4 1 further comprising: a self-housing for enabling some or all of the components can easily to be placed in removed from the mouth, being anchored to the shape of, or elements of the any combination thereof
6. (currently amended) The device of claim 1, wherein: the location of a stimulation means a stimulator indicates a direction.
7. (currently amended) The device of claim 1, wherein: the location of a stimulation means a stimulator indicates the amount of change desired.
8. (currently amended) The device of claim 1, wherein: the location of a stimulation means a stimulator indicates both a direction and the amount of desired.
9. (currently amended) The device of claim 1, wherein: a series of points stimulation means stimulators creates the perception of a selected one of the comprising A. line, B. or arrow, or C. shape, or and D any combination thereof and C to indicate a direction.
10. (currently amended) The device of claim 1, wherein: a series of points stimulation means stimulators creates the perception of a selected one of the comprising A. line, B. arrow, C. shape, and D any combination of A, B, and C arrow, or shape, or any combination thereof to indicate a distance to be
11. (currently amended) The device of claim 1, wherein: a series of points stimulation means stimulators creates the perception of a selected one of the comprising A. line, B. arrow, C. shape, and D any combination of A, B, and C a line, or arrow, or shape, or any combination thereof to indicate both the direction and the amount of distance to be communicated.
12. (currently amended) The device of claim 1, wherein: a series of points indicated by stimulation means stimulators creates the perception of a selected one of the group comprising A. line, B. arrow, C. shape, and D any combination of A, B, and C line, or arrow, or shape, or any combination thereof with said points occurring over time to create a perceived motion; whereby movement with respect to a spatial framework can be recognized; whereby the direction can be emphasized by the moving pattern moving in that or the distance to be communicated can be communicated by the length of the the speed desired to be communicated can be communicated by the timing between the sequential stimulations, or any combination thereof.
13. (currently amended) The device of claim 1, wherein: stimulation means a stimulators or some subset of them are arrayed in a roughly circular or semi-so that they may be related by the mind to direction; whereby a stimulation at a the roughly circular or semi-circular array corresponding to a direction in the

environment may be perceived as an indication of angle or degrees of change.

14. (currently amended) The device of claim 1 further comprising: a ~~first~~ sensor operatively connected to the behavior controller ~~means~~ for sensing a selected group comprising A. the direction, or B. attitudes, or C. speed, or and D. any combination thereof of A, B, and C; of the body;
whereby the behavior controller means can monitor and automatically respond to user performance.
~~any instruction not followed, or reward an instruction that was followed, or any combination thereof.~~

15. (currently amended) The device of claim 1 further comprising: a ~~second~~ sensor ~~means~~ operatively connected to the behavior controller ~~means~~ for sensing a selected one of the group comprising A. sounds, or B. vibrations, or and C. any combination thereof of A and B;
whereby the behavior controller means may monitor to sense potential problems or undesirable behavior and stimulate a corrective behavior to correct it.

16. (currently amended) The device of claim 15, wherein: all or part of the assembly is in or adequately proximate to the mouth; whereby TMJ, or tooth grinding, or cheek biting, or snoring, or other detrimental oral activities, or any combination thereof, are prevented or minimized by corrective actions directed by the controlling means behavior controller.

17. (previously presented) The device of claim 1 further comprising: a battery for provision of power.

18. (currently amended) The device of claim 1, wherein: at least some power, or additional power, or backup power, or any combination thereof for the behavior controller, or any component of the assembly requiring power, or any combination thereof, by a selected one of the group comprising A. a wire, or B. any wireless power transmission means, or and C. any combination thereof of A and B can provide power.

19. (currently amended) The device of claim 1, wherein: behavior controller ~~means~~ includes a fully functional computer processor.

20. (currently amended) The device of claim 1 further comprising: GPS (Global Positioning System) ~~means~~ operatively connected to the behavior controller ~~means~~; whereby the behavior controller means can manage the behavior of the body being directed with respect to a map, or a path, or a direction, or an area on the map, or any combination thereof by comparing the actual GPS position with a desired position and directing the body accordingly.

21. (currently amended) The device of claim 1 further comprising:

a remote ~~control means~~ controller located external to the behavior controller for allowing a selected one of the group comprising A. a person, or B. a machine, or and C. any combination thereof of A and B, to monitor the status of the body and direct its actions by sending instructions to the behavior controller;

and a ~~data transmission~~ transmitter means operatively connected to the behavior controller and remote ~~control means~~ controller for allowing communications between them; whereby the remote ~~control means~~, which can be a machine, or a computer, or a person, or a person aided by a computer, or a person aided by a machine, or any combination thereof, controller can monitor, or manage, or any combination thereof, the behavior of the body being directed.

22. (currently amended) The device of claim 21 further comprising: GPS means operatively connected through the data transmission transmitter means to the remote control means ~~controller~~ controller can manage the behavior path of the body being directed with respect to a map, or a path, or a direction, or an area on the map, or any combination thereof by comparing the actual GPS position with a desired position and directing the body accordingly.

23. (currently amended) The device of claim 21 further comprising: a video image capture means camera operatively connected to the remote ~~control means~~ controller means through the data transmission means transmitter for capturing the image from a perspective of the body; whereby the remote ~~control means~~ controller can see and, if desirable, respond to still or motion video images to direct the body by sending stimulation instructions to the behavior controller.

24. (currently amended) The device of claim 21 further comprising: a pointing means pointing device operatively connected to the remote control means controller for selecting a selected one of the group comprising A. a desired direction and or B. a desired point location, and C. any combination of A and B;

whereby ~~any graphical, or GPS map-based, or video-based image, or any combination thereof available to the remote control means can help a a living remote operator can use the pointing device to quickly identify~~ direct the behavior controller, via the remote controller, to move the body in a direction a desired point or direction by pointing it out on the image with a selected one of the group comprising A. a mouse, or B. a joystick, or and C. any other point or area pointing identifying device.

25. (currently amended) The device of claim 21 further comprising: a steering means operatively connected to the remote controller;

whereby a remote operator using the remote controller may steer the remote behavior controller with a selected one of the group comprising A. a steering

joystick, C. a keyboard, or D. any other devices capable of left-right steering
E. any combination of A, B, C, and D and the remote control means can translate
actions to desired directions of change which will result in stimulations directing
changes.

26. (previously presented) The device of claim 25, wherein: the remote directing device additionally provides a third dimension of control; whereby the device, which may be a joystick or any directing mechanism capable of three-dimensional control, can also direct a third dimension of direction.

27. (currently amended) The device of claim 21 further comprising:
a speed control controller operatively connected to the remote controller means;
whereby the remote operator, using any kind of a selected remote-controller-
interfaced device from the group comprising A. an accelerator pedal, B. a brake,
C. a joystick, or pointing device, and D. any other combination of user interface
control devices A, B, and C, can indicate an increase or decrease in the desired
speed which is ultimately converted into stimulations delivered to the body.

28. (currently amended) The device of claim 1, wherein: stimulation means the
stimulators has have or includes a positive reinforcement component;

whereby a selected one of the group comprising A. pleasant vibrations, or B.
cooling points on a hot body, or C. any stimulations that will be perceived as
positive to the body, and D. any combination of A, B, and C, are delivered to
encourage a positive behavior.

29. (previously presented) The device of claim 28, wherein: positive stimulations are made to erogenous zones.

Respectfully submitted,



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